

**BEST AVAILABLE COPY****REMARKS**

This is a full and timely response to the outstanding final Office Action mailed Aug. 15, 2005. Upon entry of the amendments in this response, claims 1 – 9, 11, 12 and 28 remain pending. In particular, Applicant has amended independent claims 1 and 28. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

**Rejections under 35 U.S.C. 102(e)**

The Office Action rejected claims 1-3, 7, 9, 11-12 and 28 under 35 U.S.C. 102(b) as allegedly unpatentable over *Yamada* (US patent No. 6,368,976). Applicant respectfully requests reconsideration and withdrawal of this rejection.

With respect to *Yamada*, *Yamada* discloses:

Then, as shown in FIG 3, a silicon oxide film 21 (the second insulating film) is formed on the side wall of the floating gate 9 by *thermal oxidation*. In this instance, the silicon oxide film 21 is thinly *formed in an upper section of the side wall of the floating gate 9*, and the silicon oxide film 21 is thickly *formed in a lower section of the side wall of the floating gate 9*.

(*Hsieh* column 5, lines 57-63 and FIG 3). (Emphasis added).

As shown in FIG. 3 of *Yamada*, as the silicon oxide film 21 is formed by thermal oxidation, all exposed sidewalls of the floating gate 9 are fully covered by the silicon oxide film 21. Therefore, the silicon oxide film 21 is formed along both the upper and lower sections of the sidewalls of the floating gate 9.

In contrast to this teaching of *Yamada*, independent claim 1 (as amended) recites:

1. A split gate flash memory cell structure comprising:  
a semiconductor region within a substrate extending to a surface;  
a gate insulator layer formed over said semiconductor surface;  
a conductive floating gate disposed over said gate insulator layer;  
a floating gate insulator layer disposed over said floating gate;  
sidewall insulator spacers disposed along bottom portions of sidewalls of said floating gate on said gate insulator layer *and not along top portions of said sidewalls of said floating gate*;

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an intergate insulator layer disposed over exposed portions of said gate insulator layer, said floating gate insulator layer and said sidewall insulator spacers; and

a conductive control gate disposed over said intergate insulator layer and covering a portion of said floating gate.

*(Emphasis Added).*

Applicant respectfully asserts that the *Yamada* is legally deficient for the purpose of anticipating claim 1. Specifically, Applicant respectfully asserts that *Hsieh* does not teach or otherwise disclose at least the features/limitation emphasized above in claim 1. Therefore, Applicant respectfully requests that the rejection of claim 1 be removed and that claim 1 be allowed.

As claims 2 -3, 7, 9, and 11-12 are dependent claims that incorporate the features/limitations of claim 1, Applicant respectfully asserts that these claims are in condition for allowance. Additionally, these claims recite other features/limitations that can serve as an independent basis for patentability.

With regard to independent claim 28, this claim recites:

28. A split gate flash memory cell structure comprising:  
a semiconductor region within a substrate extending to a surface;  
a gate insulator layer formed over said semiconductor surface;  
a conductive floating gate disposed over said gate insulator layer, the gate insulator layer extending outside of the conductive floating gate;  
a floating gate insulator layer disposed over said floating gate;  
sidewall insulator spacers disposed along bottom portions of sidewalls of said floating gate adjacent said gate insulator layer *and not along top portions of said sidewalls of said floating gate*;  
an intergate insulator layer disposed over exposed portions of said gate insulator layer, said floating gate insulator layer and said sidewall insulator spacers; and  
a conductive control gate disposed over said intergate insulator layer and covering a portion of said floating gate.

*(Emphasis Added).*

For the same reason as claim 1, Applicant respectfully asserts that *Yamada* does not teach or otherwise disclose at least the features/limitation emphasized above in claim 28. Therefore, Applicant respectfully requests that the rejection of claim 28 be removed and that claim 28 be placed in condition for allowance.

**Rejections under 35 U.S.C. 103(a)**

The Office Action also rejected claims 4 and 5 under 35 U.S.C. 103(a) as allegedly unpatentable over *Yamada* in view of *Lin* (US patent No. 6,620,689), claim 6 as allegedly unpatentable over *Yamada* in view of *Guterman* (US patent No. 6,002,152), and claim 8 as allegedly unpatentable over *Yamada* in view of *Chuang* (US patent No. 6,855,966). Applicant respectfully asserts that claims 4, 5, 6 and 8 are dependent claims that incorporate the features/limitations of claim 1, the allowability of which is discussed above.

As a separate and independent basis for the patentability of these claims, Applicant respectfully submits that the Office Action has failed to cite a proper motivation or suggestion for combining the cited references. For example, in combining *Lin* and *Yamada*, the Office Action stated only that the combination would have been obvious "in order to provide a method of fabricating a flash memory cell characterized by improvement of tip discharge efficiency." Office Action, p. 5. This alleged motivation is clearly improper in view of well-established Federal Circuit precedent.

It is well-settled law that in order to properly support an obviousness rejection under 35 U.S.C. § 103, there must have been some teaching in the prior art to suggest to one skilled in the art

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that the claimed invention would have been obvious. W.L. Gore & Associates, Inc. v. Garlock

Thomas, Inc., 721 F.2d 1540, 1551 (Fed. Cir. 1983). More significantly,

"The consistent criteria for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this [invention] should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. ..." Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure... In determining whether such a suggestion can fairly be gleaned from the prior art, the full field of the invention must be considered; for the person of ordinary skill in the art is charged with knowledge of the entire body of technological literature, including that which might lead away from the claimed invention."

(*Emphasis added.*) In re Dow Chemical Company, 837 F.2d 469, 473 (Fed. Cir. 1988).

In this regard, Applicant notes that there must not only be a suggestion to combine the functional or operational aspects of the combined references, but that the Federal Circuit also requires the prior art to suggest both the combination of elements and the structure resulting from the combination. Stiftung v. Renishaw PLC, 945 Fed.2d 1173 (Fed. Cir. 1991). Therefore, in order to sustain an obviousness rejection based upon a combination of any two or more prior art references, the prior art must properly suggest the desirability of combining the particular elements to derive a space process in a split gate flash, as claimed by the Applicant.

When an obviousness determination is based on multiple prior art references, there must be a showing of some "teaching, suggestion, or reason" to combine the references. Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1383 (Fed. Cir. 1997) (also noting that the "absence of such a suggestion to combine is dispositive in an obviousness determination").

Evidence of a suggestion, teaching, or motivation to combine prior art references may flow, inter alia, from the references themselves, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved. See In re Dembiczak, 175 F.3d 994, 1000, 50

USPQ2d 1614, 1617 (Fed. Cir. 1999). Although a reference need not expressly teach that the disclosure contained therein should be combined with another, the showing of combinability, in whatever form, must nevertheless be "clear and particular." Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617.

If there was no motivation or suggestion to combine selective teachings from multiple prior art references, one of ordinary skill in the art would not have viewed the present invention as obvious. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); Gambro Lundia AB, 110 F.3d at 1579, 42 USPQ2d at 1383 ("The absence of such a suggestion to combine is dispositive in an obviousness determination.").

Significantly, where there is no apparent disadvantage present in a particular prior art reference, then generally there can be no motivation to combine the teaching of another reference with the particular prior art reference. Winner Int'l Royalty Corp. v. Wang, No 98-1553 (Fed. Cir. January 27, 2000).

Merely identifying some benefit (from hindsight) that results from a combination is not sufficient to justify the combination, and the motivation or suggestion must come from the prior art itself, and the Office Action has failed to identify such proper motivations. For at least this additional reason that the Office Action failed to identify proper motivations or suggestions for combining the various references to properly support the rejections under 35 U.S.C. § 103, the rejections under 35 U.S.C. § 103(a) should be withdrawn.

### CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered

moot, and/or accommodated, and that the pending claims are in condition for allowance.

Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

By:



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